

WHAT IS CLAIMED IS:

1. A wiper spring for applying additional spring force to a wiper arm of a vehicle wiper assembly having a spring loaded hinge connection with a drive arm of the wiper assembly to assist in maintaining a wiper blade on the wiper arm in contact with a surface of the vehicle to be wiped during use of the wiper assembly, the wiper spring comprising a length of spring wire having a first hook-like end portion at one end shaped to slide over the drive arm from one side and a second hook-like end portion at an other end shaped to hook over the wiper arm.

2. The wiper spring of claim 1 wherein the hook-like end portions at both ends of the spring wire are generally U-shape, each including a closed end, an open end opposite the closed end, and opposite sides.

3. The wiper spring of claim 2 wherein the first hook-like end portion is in a plane that is generally rearwardly and upwardly angled relative to the axis of an intermediate length of the spring wire and is on one side of the intermediate length with the open end of the first hook-like end portion generally facing the axis of the intermediate length.

4. The wiper spring of claim 3 wherein the second hook-like end portion is in a second plane that is generally perpendicular to the axis of the intermediate length of the spring wire and extends vertically and laterally relative to the one side of the intermediate length with the open end of the second hook-like end portion generally facing downwardly.

5. The wiper spring of claim 1 further comprising at least one upwardly extending spring loop in an intermediate length of the spring wire.

6. The wire spring of claim 1 further comprising at least one downwardly angled bend in an intermediate length of the spring wire.

7. The wiper spring of claim 6 wherein the bend has a bend angle of approximately 15° to 25° relative to the general axis of the intermediate length.

8. The wiper spring of claim 1 wherein the first hook-like end portion is larger than the second hook-like end portion.

9. The wiper spring of claim 1 wherein the first hook-like end portion is in a general plane that extends generally rearwardly and upwardly at an angle of approximately 10° to 20° relative to the axis of an intermediate length of the spring wire.

10. In combination, a vehicle wiper assembly comprising a drive arm, a wiper arm, and a spring loaded hinge connection between the wiper arm and drive arm for urging the wiper arm in one direction relative to the drive arm about the hinge connection to urge a wiper blade mounted on the wiper arm toward a surface of the vehicle to be wiped upon installation of the wiper assembly on a vehicle, and a wiper spring for applying additional spring force to the wiper arm for urging the wiper arm in the same direction relative to the drive arm, the wiper spring comprising a length of spring wire having a first hook-like end portion at one end slid over the drive arm from one side and a second hook-like end portion at the other end hooked over the wiper arm.

11. The combination of claim 10 wherein the first hook-like end portion has a generally U-shape including a closed end and an open end opposite the closed end that is slipped over the drive arm from the one side and opposite sides that respectively engage inwardly and outwardly facing surfaces of the drive arm.

12. The combination of claim 11 wherein the second hook-like end portion has a generally U-shape including a closed end and an open end opposite the closed end that is hooked over the wiper arm in spaced relation

from the hinge connection with opposite sides of the second hook-like end portion adjacent opposite sides of the wiper arm.

5 13. The combination of claim 12 wherein the first hook-like end portion is in a plane that is rearwardly and upwardly angled relative to the axis of an intermediate length of the spring wire and extends from the one side of the intermediate length with the open end of the first hook-like end portion generally facing the axis of the intermediate length of the spring wire, and the second hook-like end portion is in a second plane that is generally perpendicular to the
10 axis of the intermediate length of the spring wire and extends vertically and laterally relative to the one side of the intermediate length with the open end of the second hook-like end portion generally facing downwardly.

15 14. The combination of claim 13 further comprising at least one upwardly extending spring loop in the intermediate length of the spring wire.

20 15. The combination of claim 14 further comprising at least one downwardly angled bend in the intermediate length of the spring wire between the spring loop and the second hook-like end portion.

 16. The combination of claim 15 wherein the angled bend has a bend angle of approximately 15° to 25° relative to the axis of the intermediate length.

25 17. The combination of claim 10 wherein the first hook-like end portion is larger than the second hook-like end portion.

30 18. The combination of claim 10 wherein the first hook-like end portion is in a general plane that extends at an upward and rearward angle of approximately 10° to 20° relative to the axis of an intermediate length of the spring wire.